

ABSTRACT OF THE DISCLOSURE

Method for selectively reducing mammal neuron damage or death in neuroimmunophilin-rich neurons of central, peripheral, and autonomic nervous systems of a mammal while not reducing damage or death to neuroimmunophilin-poor cells and tissues selected from the group consisting of glia, glia-derived tumor cells, abnormal neuron-derived tumor cells, non-brain tumors, and non-neuron tissue of the body from ionizing radiation. The method includes preparing a dosage of a neuroimmunophilin ligand selected from the group consisting of cyclosporins and functional derivatives, metabolites, variants, and salts thereof which are able to cross the blood-brain barrier. The dosage is from an effective amount to less than 1 gr/kg of body weight of said mammal. The method includes the step of administering that dosage to the mammal before, co-incident with, or after ionizing radiation of the mammal. The dose is administered the same day as, but not later than one week after, last radiation exposure.